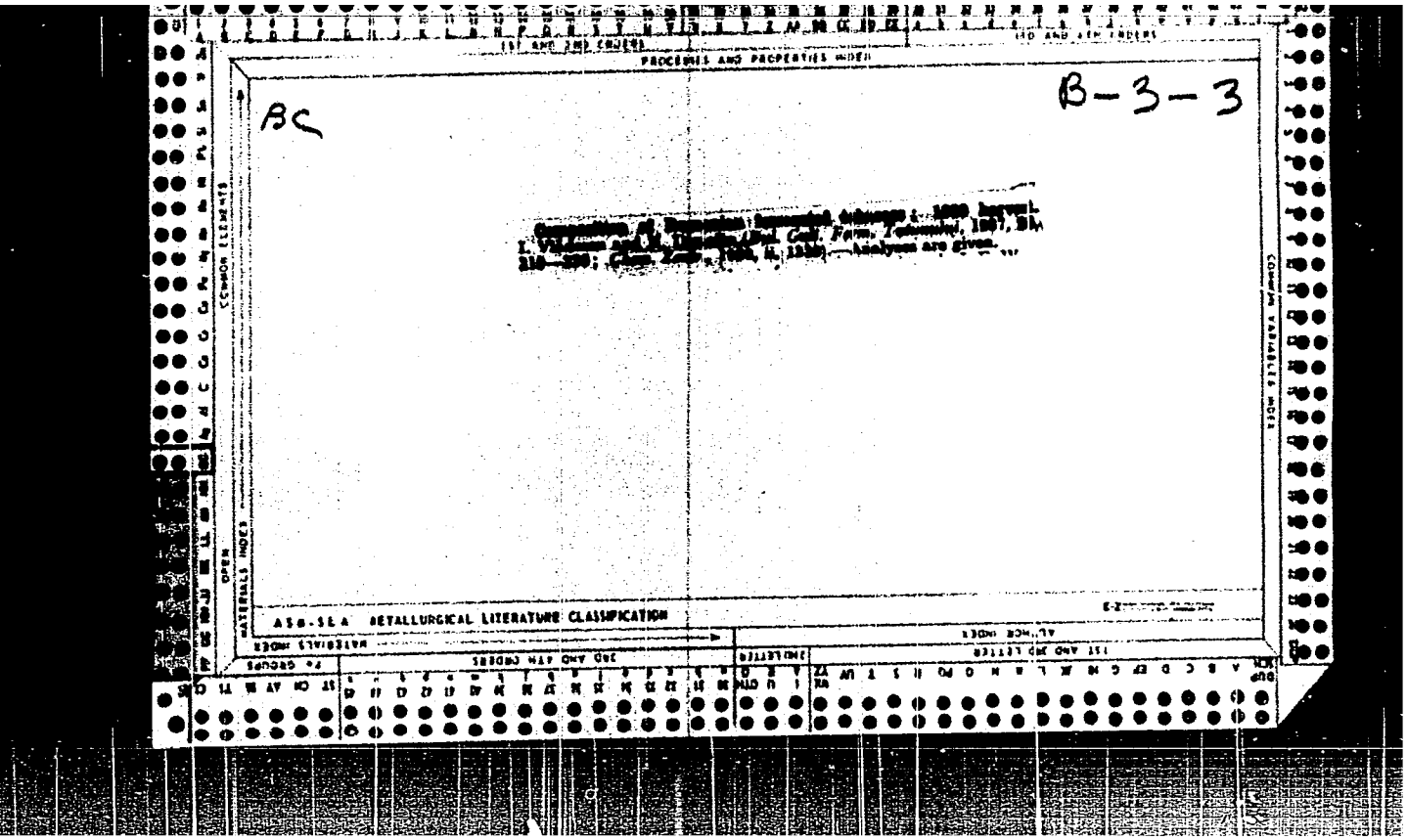
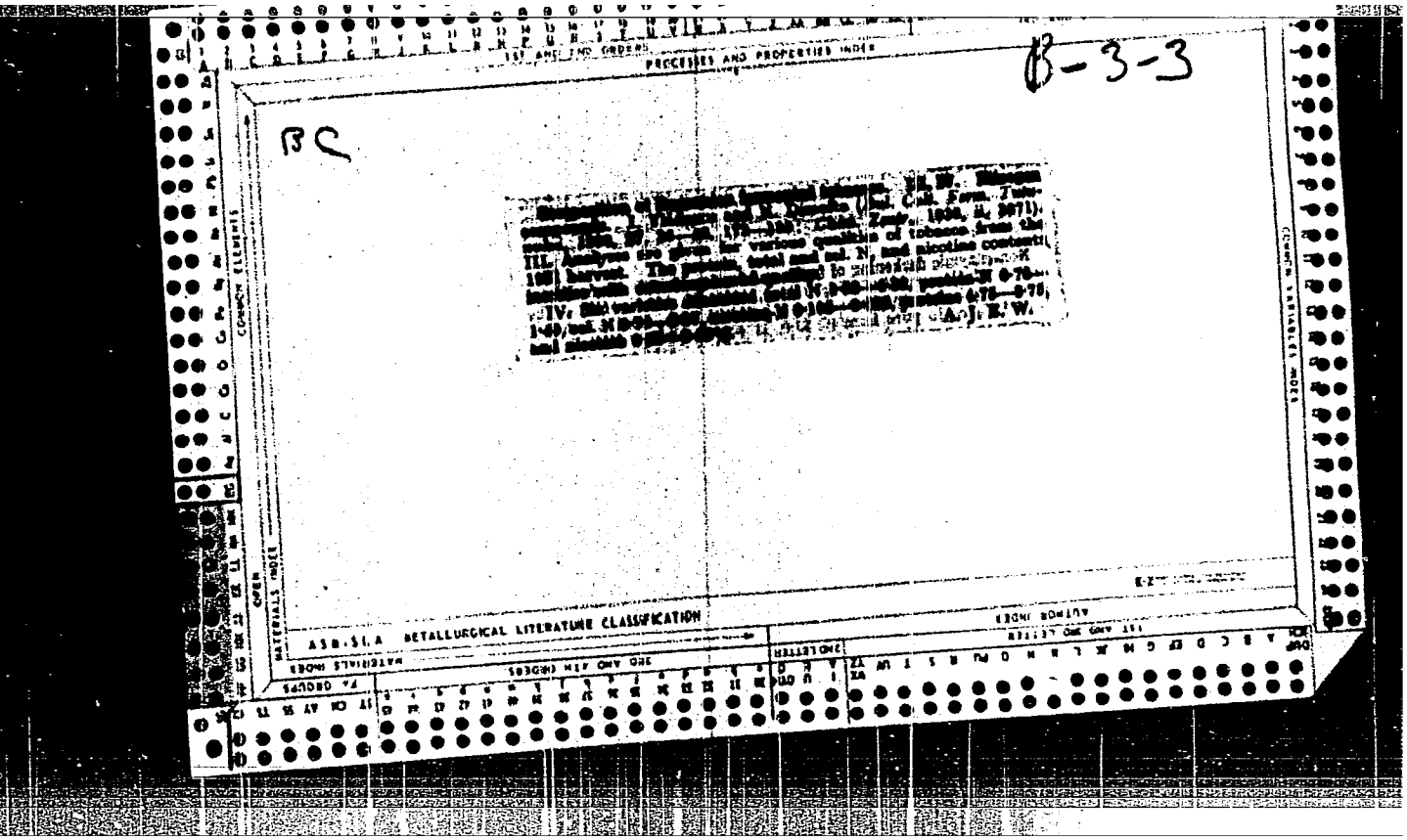




APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000410420001-9"

1ST AND 2ND ORDERS

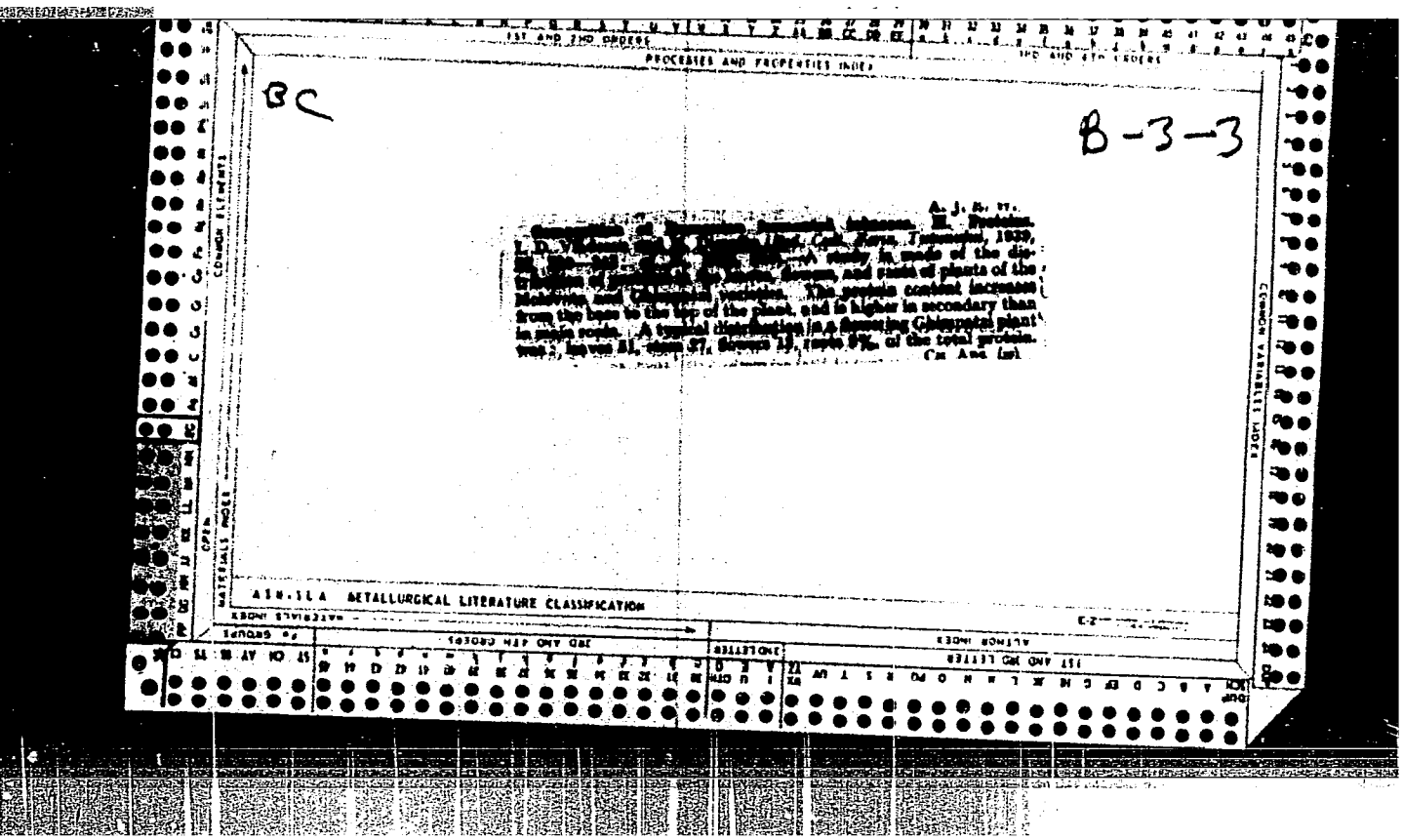
PROCESSES AND PROPERTIES INDEX

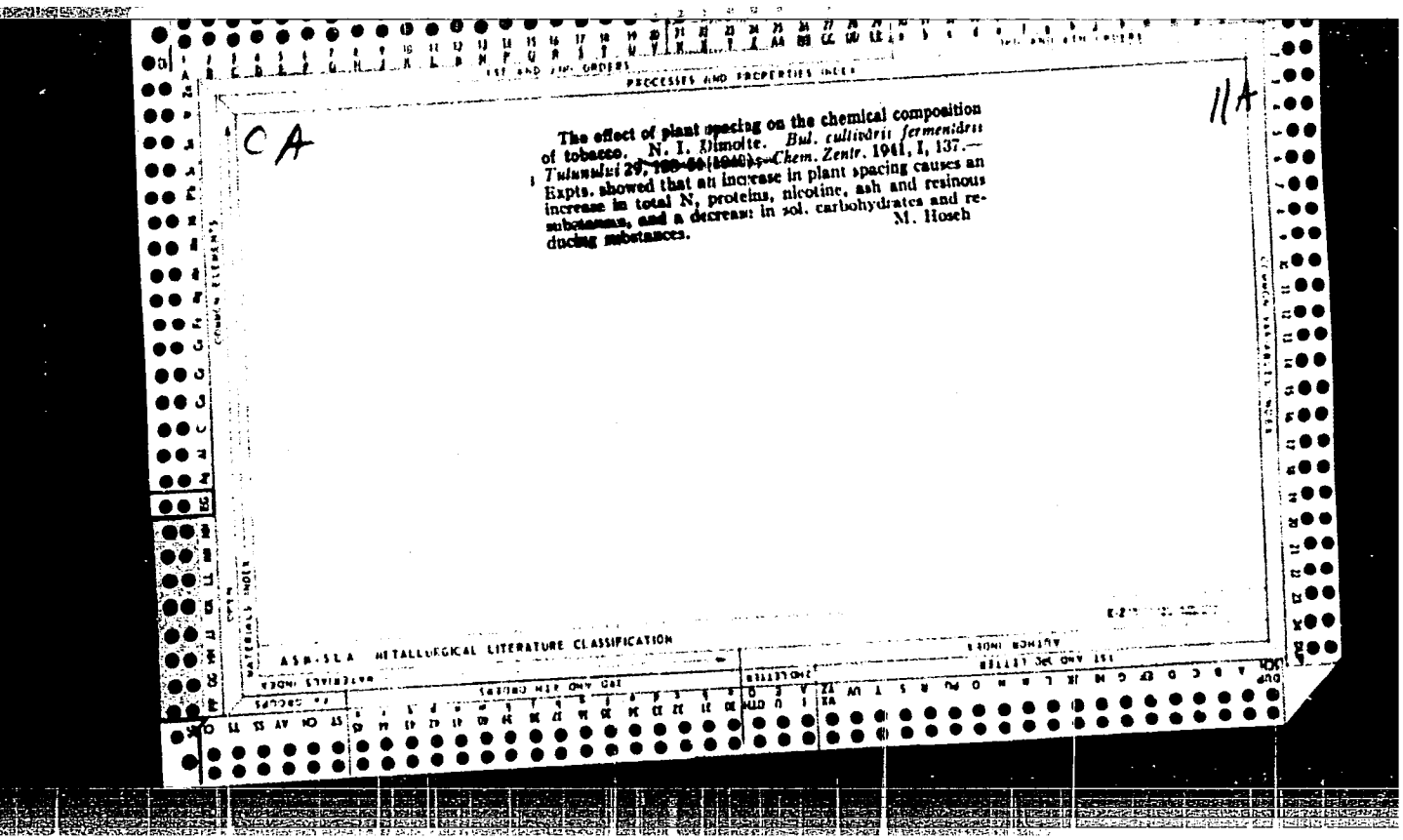
3RD AND 4TH ORDERS

Composition of fermented Rumanian tobaccos. IV Nitrogen compounds. I. Vlădescu and N. Dimulte. *Bul. cultivării fermentării Tutunului* 27, 171-85(1938); cf. C. A. 32, 4721[9].—The compn. of 8 Rumanian tobacco grades of the 1932 crop is approx. as follows: total N 1.53-4.32, protein N 0.76-1.40, sol. N 0.70-3.07, nicotine N 0.105-0.638, proteins 4.75-8.75 and nicotine 0.61-3.69%. The exact results are given in tabular form.

A. H. Krappe

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

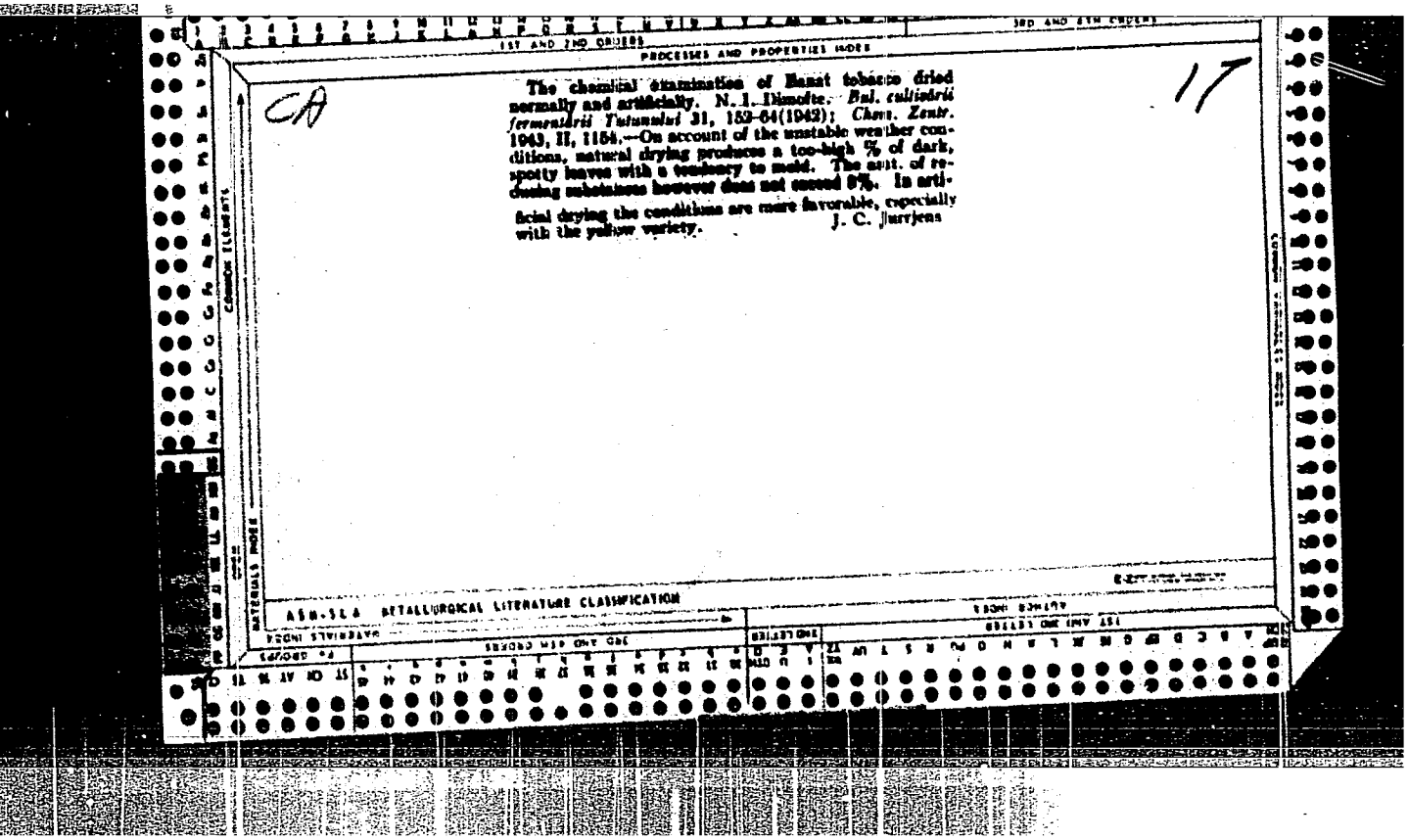




CA

11A

The effect of plant spacing on the chemical composition of tobacco. N. I. Dimolte. *Bul. cultivării fermentării Tutunului* 29, [illegible] (1940). *Chem. Zentr.* 1941, I, 137.—Expts. showed that an increase in plant spacing causes an increase in total N, proteins, nicotine, ash and resinous substances, and a decrease in sol. carbohydrates and reducing substances. M. Hosch



CA

17

The chemical examination of Banat tobacco dried normally and artificially. N. I. Dimofte. *Bul. cultivării fermentării Tutunului* 31, 153-64(1942); *Chem. Zentr.* 1943, II, 1154.—On account of the unstable weather conditions, natural drying produces a too-high % of dark, spotty leaves with a tendency to mold. The amt. of reducing substances however does not exceed 9%. In artificial drying the conditions are more favorable, especially with the yellow variety. J. C. Jurrjens

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

CA

17

The chemical composition of mosaic-infected tobacco. N. I. Dimofte. *Bul. cultiv. fermentarii Tutunului* 31, 278-8(1942); *Chem. Zentr.* 1943, II, 1155.—Expts. with Virginia tobacco showed that mosaic infection caused the following changes: an increase in total N and decrease in nicotine content, an increase in protein and a decrease in reducing substances as well as carbohydrates, polyphenol compds., Schmuck-coeff., and in benzene- and ether-sol. resins. J. C. Jurrjens

COMMON ELEMENTS

MATERIALS INDEX

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

5(3)

R/003/60/011/04/004/041
D0015/D3001

AUTHORS: Solomon, O.F.; Dimonie, M.; Tomescu, M.

TITLE: Copolymerization of the Vinyl Acetate, Acrylonitrile and Styrene Ternary System

PERIODICAL: Revista de Chimie, 1960, Vol 11, Nr 4, pp 204-206

ABSTRACT: The article deals with calculation required to maintain the constant composition in ternary copolymerization. To maintain a compound constant, unless it is an azeotrope, the component reacting best is introduced with a certain velocity into the reacting medium. The introduction velocity is determined by graphic methods. A brief description of the method of calculation in the case of ternary copolymerization is also given in the article. A number of ternary-system copolymerizations was also carried out to verify the theoretical calculation which will be the

Card 1/2

R/C03/60/011/04/004/041
D0015/D3001

Copolymerization of the Vinyl Acetate, Acrylonitrile and Styrene Ternary System

object of a separate article. There are 3 references, 2 of which are English, and 1 unidentified.

ASSOCIATION: Laboratorul de Chimie Macromoleculară al Institutului Politehnic (Laboratory of Macromolecular Chemistry at the Polytechnical Institute), Bucharest

Card 2/2

85173
R/003/60/011/009/002/002
A125/A026

15.8104

AUTHORS: Solomon, O.F.; Dimonie, M.; Ambrus, C.

TITLE: The Stereospecific Polymerization and the Isotactic Polymers of Vinylic Monomers With Heterocyclic Substituents. Report II. - Polymerization of Vinylcarbazole

PERIODICAL: Revista de Chimie, 1960, Vol. 11, No. 9, pp. 520 - 526

TEXT: The authors present in subject article the results of their research conducted on the isotactic polymerization capacity of the vinylic monomer with heterocyclic substituents, i.e., vinylcarbazole. Vinylcarbazole obtained by direct vinylation under pressure (Ref. 5) was used as raw material. The purification of the monomer was accomplished by fractionated recrystallization. Petroleum ether and ligroine flushed for 10 h on metallic sodium served as solvent. The catalysts were obtained by contacting buthyl-lithium and titanium tetrachloride in a medium of ligroine and an atmosphere of inert gases. Buthyllithium was produced according to the methods recommended in Reference 6. Titanium tetrachloride was of Merck origin. The catalysts were prepared in the installation presented in Figure 1. Brief reference is made to the installation,

Card 1/3

The Stereospecific Polymerization and the Isotactic Polymers of Vinylic Monomers With Heterocyclic Substituents. - Report II. - Polymerization of Vinylcarbazole

the operation procedure and conditions. The authors then describe the installation used for the polymerization (Fig. 2) and the operation procedure. The conversion was determined by a method, which permits the determination of the double connection of non-reacted vinylcarbazole, according to R.V. Martin. The gross isotactic polyvinylcarbazole was fractionated according to the methods recommanded by G. Natta (Ref. 10). The authors obtained the following three fractions: 1) A fraction of atactic polyvinylcarbazole soluble in cold carbon tetrachloride, having a melting point of 220°C; 2) a fraction of polyvinylcarbazole soluble in carbon tetrachloride at 60°C and having a melting point of 295°C; and 3) a fraction of polyvinylcarbazole insoluble in boiling carbon tetrachloride, having a melting point of 325°C. The melting point was determined with a "Poladun IV Rathenow" polarization microscope, and the crystalline structure by an X-ray apparatus supplied by the ICHCHIM. Based on these experiments, the following results were obtained: The conversion increases rapidly for a lithium-titanium ratio of 6.3 and 1.5 during a time interval of 0 to 30 min (Fig. 4). For a subunitary ratio (0.75) the increase of the conversion in function of the time is very rapid, but stops at 70%. The supra-unitary ratios attain 90%. The re-

The Stereospecific Polymerization and the Isotactic Polymers of Vinylic Monomers With Heterocyclic Substituents. - Report II. - Polymerization of Vinylcarbazole

action speeds are high at the beginning of the polymerization, but quickly drop to small values and then remain constant (Figs. 5 and 6). The ratio of the isotactic fraction against the atactic fraction is not influenced by the time at a given moment. The great influence of the time on this ratio is noticed only at the beginning of the polymerization (Fig. 7). The variation speed drops quickly to zero (Fig. 8). The stereospecific action, i.e., the influence of the lithium/titanium ratio on the isotactic-fraction/atactic-fraction ratio is shown in Figure 9. The catalytic action is given in Figure 10, which shows that a maximum conversion can be obtained within a short time if the monomer is added after a certain time interval. There are 9 figures, 1 photograph and 12 references: 5 Rumanian, 3 English, 2 German, 1 Czechoslovak and 1 Italian.

ASSOCIATION: Laboratorul de Chimie Macromoleculară al Institutului Politehnic (Laboratory of Macromolecular Chemistry of the Polytechnical Institute) in Bucharest

Card 3/3

Dimonie, M.

SOV/4982

International symposium on macromolecular chemistry, Moscow, 1960.

Mezhdunarodnyy simpozium po makromolekulyarnoy khimii SSSR, Moskva, 14-18 iyunya 1960 g.; doklady i avtoreferaty. Sektsiya I. (International Symposium on Macromolecular Chemistry Held in Moscow, June 14-18, 1960; Papers and Summaries. Section I.) [Moscow, Izd-vo AN SSSR, 1960] 346 p. 5,500 copies printed.

Sponsoring Agency: The International Union of Pure and Applied Chemistry, Commission on Macromolecular Chemistry.

Tech. Ed.: T. V. Polyakova.

PURPOSE: This collection of articles is intended for chemists and researchers interested in macromolecular chemistry.

COVERAGE: This is Section I of a multivolume work containing scientific papers on macromolecular chemistry in Moscow. The material includes data on the synthesis and properties of polymers, and on the processes of polymerization, copolymerization, polycondensation, and polyrecombination. Each text is presented in full or summarized in French, English, and Russian. There are 47 papers, 28 of which were presented by Soviet, Rumanian, Hungarian, and Czechoslovakian scientists. No personalities are mentioned. References accompany individual articles.

Card 6/9

49

S/081/62/000/009/074/075
B171/B144

AUTHORS: Solomon, Ozias, Tomescu, Margareta, Drăgan, Doina, Dimonie, Mihai

TITLE: Copolymerization of the ternary system: vinyl acetate, acrylonitrile, styrene

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 9, 1962, 702, abstract 9R55 (Bul. Inst. politehn. Bucuresti, v. 21, no. 4, 1959, 101-112)

TEXT: The kinetics of the mass copolymerization of vinyl acetate, acrylonitrile and styrene (65°C ± 0.02) in the presence of 0.5% of benzoyl peroxide, leading to the formation of a mixture of two- and three-component copolymers (CP) have been studied. The values, obtained from an experimental determination of the CP composition were found to be in good agreement with those calculated by using the composition equation. The thermal resistance of CP according to Martens was 97°C, the melting point was 225-260°C. [Abstracter's note: Complete translation.]

Card 1/1

15.8000

S/081/62/000/015/035/038
B171/B101

AUTHORS: Solomon, Ozias, Tomsou, Margareta, Demian, Neli, Dimonie, Mihai

TITLE: Copolymerization of a ternary system: vinyl acetate, acrylonitrile, styrene. Communication III-a. Emulsion and suspension copolymerizations

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 15, 1962, 631, abstract 15R26 (Bul. Inst. politehn. Bucuresti, v. 22, no. 3, 1960, 97-109)

TEXT: The kinetics of emulsion and suspension copolymerizations of the ternary system vinyl acetate-acrylonitrile-styrene have been investigated. The product of the reaction is usually a mixture of binary and ternary copolymers. A new method of calculation has been devised, with the help of which a homogeneous ternary copolymer was obtained. For the previous communication see RZhKhim. 1962, 9R55. [Abstracter's note: Complete translation.]

Card 1/1

DIMO, Paul, ing. (Bucuresti)

Formula of losses and the optimizing of schemes and regimes on a new path as a result of the application of nodal analysis with representative. Energetica Rum 10 no.6:219-242 Je '62.

1. Specialist la Institutul de studii si proiectari energetice.

ALEKSANDROVA, I.V.; DIMO, V.N.; MURATOVA, V.S.; NOGINA, N.A.; PRESNYAKOVA, G.A.; RAZORENOVA, N.A.; TSERLING, V.V.; SHKONDE, E.I.

Second Congress of Soil Science Delegates. Pochvovedenie no.1:93-102 Ja '63. (MIRA 16:2)
(Soil research--Congresses)

DIMOV, Atanas

Continuous increase of labor productivity, the most important precondition for the victory of communism. Trud tseni 4 no.7:7-16 '62.

DIMOV, A.I., inzh.

Loads on the concrete lining of a mine shaft in a zone of steady bearing pressure. Shakht. stroi. 9 no.2:9-11 F '65. (MIRA 18:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy marksheyderskiy institut.

DIMOV, B.

Bulgaria/Chemical Technology - Chemical Products and Their Application. Fermentation Industry, I-27

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 63586

Author: Dimov, B.

Institution: None

Title: Technology of Red Table Wines of Gymza Variety

Original Periodical: K"m tekhnologiyata na g"mzovite cherveni vina. Lozarstvo i vinarstvo, 1954, 3, No 4, 242-245; Bulgarian

Abstract: Red table wine of Gymza variety is made according to the conventional technology of table wine. Daily airing during vigorous fermentation is recommended. Removal from yeast and transfers are also carried out with extensive aeration.

Card 1/1

DIMOV, B.

BULGARIA/Optics - Photography

Abs Jour : Referat Zhur - Fizika, No 5, 1957, 13269 K-11

Author : Dimov, B.
Inst :
Title : Photography in Infrared Light.

Orig Pub : Aviats. delo (B"lg.), 1956, 5, No 4, 35-43

Abstract : No abstract.

Card 1/1

DIMOV, Boian, inzh.

Sewerage system of Varna. Khidrotekh i melior 9 no.9:284-286 '64.

DIMOV, Dimitur, inzh.

Specific consumption of energy in the industries of Bulgaria. Tekhnika Bulg 11 no.2:50-53 '62.

1. Nauch.sutr. v IE pri BAN.

BABERKOV, Iv., inzh.; DIMOV, D., inzh.; BOTEV, G., inzh.

Possibilities of using coal cutters in Bulgaria. Min delo 17 no.5:6-10 My '62.

1. Minen nauchnoizsledovatelski institut.

DIMOV, D.; HRISTOV, D. [Khristov, D.]

Anhydrous stanochloride as accelerant in resin vulcanization of one type of butyl rubber. Doklady BAN 16 no.6:613-616 '63.

1. Zavod antomobil'nykh shin imeni G.Dimitrova, Sofiya, i Kafedra organicheskoy khimicheskoy tekhnologii Sofiyskogo gosudarstvennogo universiteta. Submitted by Academician G.Rankov.

DZHENDOV, Iliia, inzh.; DIMOV, Dimitur, inzh.

Water cooling of furnace transformers mounted on the arc steel-casting furnaces in the Machine Construction Plant of Pernik. Ratsionalizatsiia 13 no.12:13-14 '63.

ATANASOV, At.; MARINOV, V.; DIMOV, D.

Electrocardiographic changes during surgery in old age. Khirurgiia 17 no.2:188-189 '64.

1. Iz Katedrata po propedevtika na khirurgichnite bolesti pri VMI [Visshi meditsinski institut] "I.P. Pavlov", Plovdiv.

DIMOV, D.

"Increasing Production of Glucose", P. 10, (RATSIONALIZATSIIA, Vol. 4, No. 1, Jan. 1954, Sofiya, Bulgaria)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, No.1, Jan. 1955, Uncl.

DIMOV, D.; BOGATEV, K.

For efficient work in the electric installations in many-storied dwelling buildings. p. 14
Tekhnika Vol. 7, No. 5, 1958. Sofiia, Bulgaria.

Monthly Index of East European Accessions (EEAI) LC, Vol. 7, No. 10, Oct. 58

DIMOV, D.

"Efficient drilling of big openings"

Tezhka Promishlenost. Sofiia, Bulgaria. Vol. 8, no. 1, Jan. 1959

Monthly list of East European Accessions (EEAI), LC, Vol. 8, No. 6, Jun 59, Uncles

BULGARIA/Chemical Technology. Chemical Products and Their Applications. Food Industry. II

Abd Jour: Ref Zhur-Khim., No 8, 1959, 29318.

Author : Dimov, D. and Pavlov, G.
Inst :
Title : Peppers as Vitamin-Containing Raw Materials for the Canning Industry.

Orig Pub: Khranitelna Promishlenost, 7, No 9, 18-20 (1958) (in Bulgarian)

Abstract: The ascorbic acid (I) content of peppers has been measured by the Emeri-Ekelen [transliterated] method and the effect of sealing temperature, sterilization temperature, and vinegar content on the content of I in the pickled peppers has been investigated. It has

Card : 1/3

Abs Jour: Ref Zhur-Khim., No 8, 1959, 29318.

been found that technically ripe peppers (dark green to vibrant red color) contain less I than biologically ripe peppers (100 vs 240 mg-%). 20 days after pickling (sterilization: 7 min at 110°) the content of I in the peppers decreased by about 20%; at pH 3 (scaling), 28-31%; at pH 5, 20-22%; and at pH 9, 15-22%. The exceptional stability of the I in the peppers is explained by the presence of unidentified substances in the latter which inhibit the activity of the oxydizing enzymes present in the system. The complete elimination of O_2 from the tins is recommended. Diagrams giving the dynamics of I in the pepper juices under the

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BULGARI./Chemical Technology. Chemical Products and Their Applications. Food Industry. II

Abs Jour: Ref Zhur-Khim., No 8, 1959, 29318.

effect of $CuSO_4$ and of aeration and with 5 min boiling are included. -- A. Marin.

Card : 3/3

BATKOV, A.; BIIAZOV, I.; DIMOV, D.; MILOVANOV, K.

Possibilities and economic aspects in the construction of small hydroelectric power plants at certain irrigation canals and smaller dams. Izv Inst energ BAN 5:263-290 '63.

POPOV, I.; DIMOV, D.

Hematoma of the musculus rectus abdominis simulating torsion of an ovarian cyst. Akush. ginek. (Sofiia) 4 no.4:339-340 '65.

1. Visshi meditsinski institut, Varna, Katedra po akusherstvo i ginekologiia (rukov.: doc. G. Iliev).

DI.OV, D.

Wire radio installations. p. 25

Vol. 4 no. 6, 1955
RADIO
Sofiya, Bulgaria

So: Eastern European Accession Vol. 5 No. 4 April 1956

DIMOV, D.

Radio installation with wiring. p. 75.

Vol. 4, no. 7/8, 1955
RADIO
Sofiya, Bulgaria

So: Eastern European Accession Vol. 5 No. 4 April 1956

DIMOV, D.

DIMOV, D. Consultation on technology. p. 54.

Vol. 5, No. 9, 1956
RADIO
TECHNOLOGY
Sofiia, Bulgaria

So: East European Accession, Vol. 6, No. 3, March 1957

DIMOV, D.

DIMOV, D. Amateur's 20-watt amplifier. p. 19. Vol. 5, no. 11, 1956
ELEKTROENERGIIA. Sofiia, Bulgaria

SOURCE: East European Accessions List (EEAL) Vol 6, No. 4--April 1957

DIMOV, D.

Resistance-coupled amplifier. p. 49.
(RADIO I TELEVIZIIA, Vol. 6, no. 5, 1957, Sofia, Bulgaria.)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, no. 12, December 1957 Uncl.

DIMOV, D.

The first radio exhibition at Razgrad. Radio i televiziia 11 no.12:356 '62.

DIMOV, D., inzh.

Amateur transistorized avometer. Radio i televiziia 12 no. 12: 376-377 '63.

DIMOV,D.; RASHKOV,P.

The characteristics and elements of the normal rate electrosphygmogram. Cor vasa 6 no.1:57-66 '64.

Differential (rate) electrosphygmograms in Takayasu disease. Ibid. 67-75

1. Department of Functional Cardiovascular Diagnostics, Laboratory of Experimental Construction, Plovdiv, Bulgaria.

ACC NR: AP6010175 SOURCE CODE: BU/0011/65/018/008/0739/0741

AUTHOR: Christov, D.; Dimov, D.

ORG: Physics Faculty, Sofia University; Tire Factory "Georgi Dimitrov", Sofia

TITLE: Lead halogenide acceleration of resin-vulcanizing of butyl rubber

SOURCE: Bulgarska akademiya na naukite. Doklady, v. 18, no. 8, 1965, 739-741

TOPIC TAGS: metal compound, chloride, butyl rubber, alkylphenol, formaldehyde, resin, vulcanization, solid mechanical property, lead compound

ABSTRACT: Among the previously investigated metal chlorides, stannous chloride proved to be the most active accelerator of the butyl rubber vulcanization with alkylphenolformaldehyde resins. However, in practice, the use of $SnCl_2 \cdot 2H_2O$ and of other metal chlorides (crystalline hydrates) encounters considerable difficulties due primarily to the strong associated corrosion of the mixers and vulcanization molds (see Compt. rend. Acad. bulg. Sci., 16, 1963, No 6, 613). Consequently, it became important to test the acceleration properties of those metal halogenides which do not form crystalline hydrates under normal conditions and are thus not hygroscopic. Tests were carried out on PbF_2, $PbCl_2$, $PbBr_2$, and PbI_2 in fine crystal form. The rubber composition was given earlier in the above mentioned reference. Comprehensive (generally favorable) results cover the Shore hardness A, module

Card 1/2

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ACC NR: AP6010175

100, module 300, tensile strength in kg/cm^2, relative stretching in %, and remanent stretching in %. The authors note that it would be advisable to study the halogenide action under optimum ingredient composition. This paper was presented by Academician D. Iwanoff on 15 April 1965. Orig. art. has: 1 table. [JPRS]

SUB CODE: 11, 13, 07 / SUBM DATE: 15Apr65 / ORIG REF: 002

Card 2/2

BULGARIA/Optical- Optical Methods of Analysis. K

Abs Jour : Ref Zhur Fizika, No 2, 1960, 4698

Author : Genchev, Ml., Dinov, F.
Inst : -
Title : Determination of the Molecular Weight of Inorganic and Complex Chromates by Means of the Ultraviolet Absorption Spectra

Orig Pub : Izv. Khim. in-t. B"lg. AN, 1958, 6, 45-54

Abstract : A method is proposed for determining the molecular weights of a series of inorganic and complex chromates, based on the use of the Bouguer law. The molecular weight of the investigated substance is determined from the formula

$$M_2 = \frac{D_1}{D_2} \cdot C_2 \cdot \frac{M_1}{C_1},$$

Where D_1 and D_2, C_1 and C_2, M_1 and M_2 -- optical densities, concentrations, and molecular weight of the

Card 1/2

BULGARIA/Optics - Optical Method of Analysis.

Abs Jour : Ref Zhur Fizika, No 2, 1960, 4698 K

standard (I) and investigated (II) substances. The standard used was the compound $(NH_4)_2CrO_4$. It is shown that the smallest relative error in the determination of the molecular weight is obtained when equal concentrations of (I) and (II) are used. -- S.O. Mirumyants

Card 2/2

DIMOV, Georgi

Some new problems in physics. Mat i fiz Bulg 6 no.2:63 Mr-Ap '63.

DIMOV, G.

DIMOV, G. Realization of the technological regime under optimum conditions. p.17.

Vol. 5, no. 2, Mar./Apr. 1956, TEKHNIKA, SOFIYA, BULGARIA.

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 5, no. 10, Oct 1956.

DIMOV, G.

DIMOV, G. Conducting technological programs under optimum conditions, important for increasing labor productivity and lowering cost price of products. p.42.

Vol. 5, no. 2, 1956, TEZHKA PROMISHLENOST, SOFIYA, BULGARIA.

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 5, No. 10, Oct. 1956.

Dimov, Georgi

BULGARIA/Chemical Technology - Chemical Products and Their Application. Fertilizers. H-3

Abs Jour : Referat Zhur - Khimiya, No 1, 1958, 1898

Author : Dimov Georgi
Inst : -
Title : The Possibility of Producing Ammonium Sulfate from Gypsum.

Orig Pub : Tezhka prom-st, 1957, 6, No 2, 27-29

Abstract : Technical and economic considerations are presented concerning the production of $(NH_4)_2SO_4$ from gypsum, in Bulgaria.

Card 1/1

BULGARIA / Physical Chemistry. Molecule. Chemical Bond. B-4

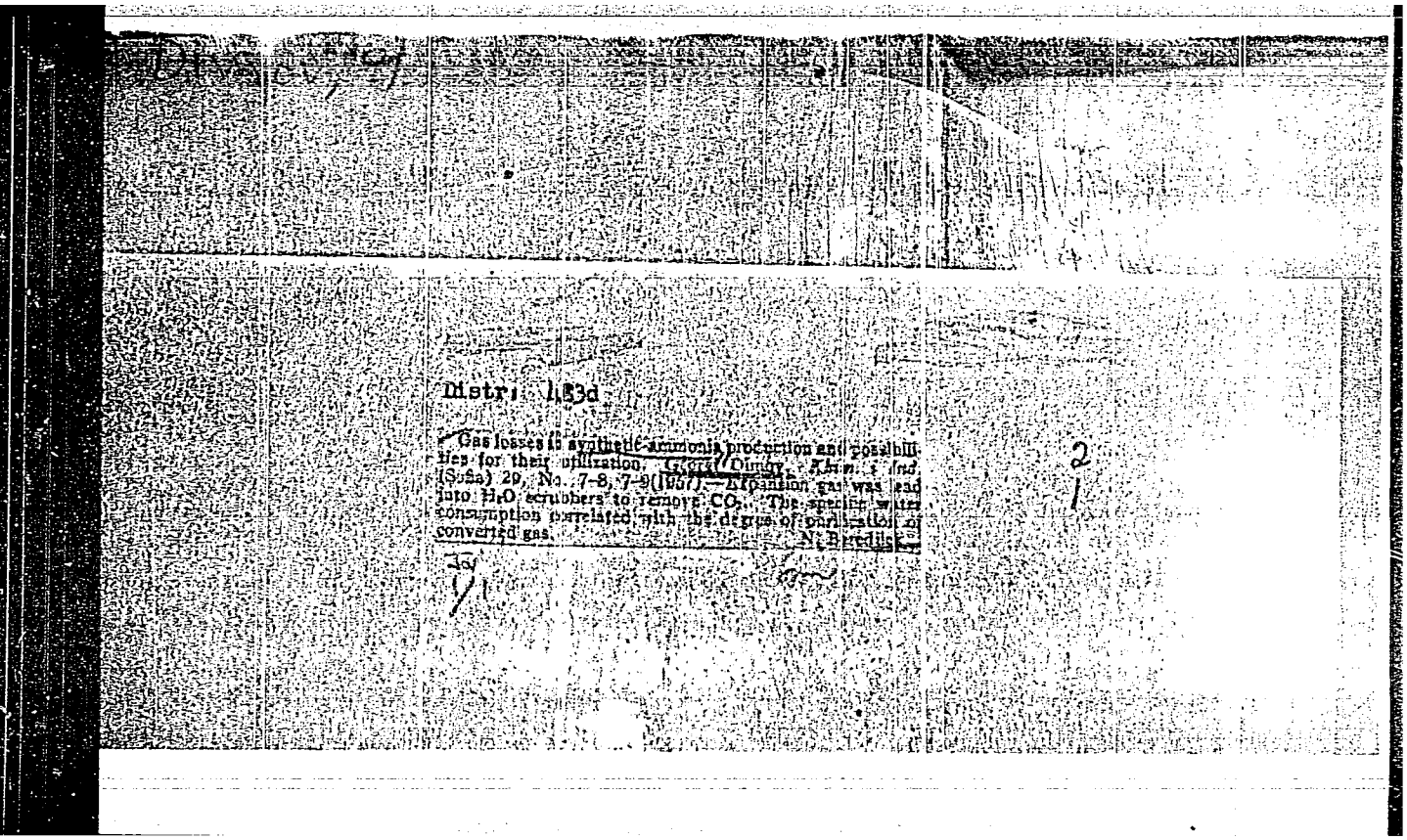
Abs Jour: Ref Zhur-Khimiya, No 23, 1958, 76284.

Author : Genchev, M. and Dimov, G.
Inst : Bulgarian Academy of Sciences.
Title : Spectrographic Determination of Molecular Weights. I. Determination of Molecular Weights of Inorganic and Complex Chromates by Means of Their UV Absorption Spectrum.

Orig Pub: Doklady Bulgar Akad Nauk, 10, No 4, 297-300 (1957) (in English with a Russian summary).

Abstract: The relation $M_X = (D_O C_X / D_X)(M_O / C_O)$ (1), where D_O, D_X, C_O, C_X, M_O, and M_X are the optical density, concentration, and molecular weight of the standard and of the unknown solutions, respectively, is proposed for the determination of unknown molecular weights. The relation (I) can

Card 1/2



Distr: 4,83d

Gas losses in synthetic ammonia production and possibilities for their utilization. G. Gerasimov. Khim. i Ind. (Sofia) 29, No. 7-8, 7-9(1957).—Expansion gas was led into H_2O scrubbers to remove CO_2. The specific water consumption correlated with the degree of purification of converted gas. N. Petrellis

Dimov, G.

COUNTRY : BULGARIA
CATEGORY : Chemical Technology. Chemical Products and Their Applications. Fermentation Industry.
ABS. JOUR. : RZhKhim., No 17, 1959, No. 62480
AUTHOR : Dekov, L.; Benchev, I.; Balev, M.; Koyevski, N.;
INSTITUTE : -
TITLE : Improvement of Plum Whiskeys in the Troyanskiy Rayon (Bulgaria).
ORIG. PUB. : Nauchni tr. M-vo zemed i gorshite. Ser. rastenivevudstvo, 1958, 3, No 5, 41-46

ABSTRACT : For the quality improvement of plum whiskeys, their supplementary redistillation was investigated with the addition (in different combinations) of: grape juice concentrate of 5 cm³ per 1 L, of 0.5 cm³ of 30% H_2O_2 per 1 L, and also thermal treatment at 70° for approx. 4 days. A sample that was subjected to thermal treatment with the addition of H_2O_2 and grape juice concentrate had the best bouquet qualities. Addition of H_2O_2 and copper shavings with the subsequent thermal

Dimov, G.

Card: 1/2

H - 111

3

ABSTRACT Con'd : treatment also improved the bouquet. Based on laboratory tests and on the experiments, two methods of improving qualities of plum whiskeys are recommended for the adoption by the industry: 1) additional distillation with the addition of H_2O_2, copper shavings, tanning substances derived from oak, with subsequent thermal treatment and 2) thermal treatment of whiskey with the addition of grape juice concentrate (without the redistillation. — I. Skurkhin.

Card: 2/2

B

COUNTRY : BULGARIA
CATEGORY : Physical Chemistry. General Problems

ABS. JOUR. : RZKhim., No. 1 1960, No. 54

AUTHOR : Genchev, M.; Dimov, G.
INST. : Bulgarian AS, ~~Chemical~~ Institute
TITLE : Determination of Molecular Weights of Simple and Complex Chromates with Use of Ultraviolet Absorption Spectroscopy
ORIG. PUB. : Izv. Khim. in-t. B"lg. AN, 1958, 6, 45-54

ABSTRACT : The conditions under which the determination of the molecular weights of chromates with the application of ultraviolet spectroscopy leads to the most accurate results were investigated. -- From authors' summary

CARD: 1/1

B-1

DIMOV G

Country : Bulgaria H-8
Category= :

Abs. Jour. : 39204

Author : Dimov, G.
Institut. : Not given
Title : Possibilities for the Utilization of the Waste Gases from the Production of Synthetic Ammonia

Orig. Pub. : Tezhka Promishlenost, 7, No 1, 26-28 (1958)

Abstract : Plant-scale experiments have shown that the gases leaving the expansion engines (in the CO_2 removal section in which the gases are scrubbed with water) at a pressure of 4.2-4.6 atm and containing (in %): CO_2 75.6-78, H_2 14-17.3, N_2 + Ar 4.7-7, CO 1.9-2.2, O_2 0.17-0.3 can be purified of the greater portion of the CO_2 by scrubbing with water to yield a gas containing (in %): CO_2 20.9-27.5, H_2 51.4-57.2, N_2 + Ar 12.2-16.4, CO 5.4-5.6, and O_2 0.2. This gas approaches in composition the converted gas mixture. Data on the water consumption as a function of the degree of purification of the converted gas are presented together with a technical and economic evaluation. The bibliography lists 6 titles.

H-27 G. Rabinovich

Card: 1/1

DIMOV, G.

"Influence of complex-chemical combination on the reactive capacity of organic compounds. I. Concerning the oxidation of dibenzylamine with potassium dichromate in the presence of cadmium cation. In German."

DOKLADY, Sofiia, Bulgaria; Vol. 11, no. 2, Mar./Apr. 1958

Monthly list of East Europe Accessions (EEAI), LC, Vol. 8, No. 6, Sept 59
Unclas

DIMOV, G; GENCHEV, M.

"Determination of molecular weights of inorganic and complex chromates with the Pulfrich photometer. In English."

DOKLADY, Sofiia, Bulgaria, Vol. 11, no. 2, Mar.?Apr. 1958

Monthly list of East Europe Accessions (EEAI), LC, Vol. ', No. 6, Sept 59
Unclas

DIMOV, G.

Determination of the molecular weight of inorganic and complex chromates by their ultraviolet absorption spectra. XII. Genchev and G. Dimov. *Bulgar. Akad. Nauk., Inorg. Khim. Inst.* 6, 45–64(1958).—Results are appraised. The method is based on the law of Bouguer-Lambert-Beer and the formula $M_2 = (D_1C_2/D_2)(M_1/C_1)$ is used. D_1 and D_2 are the optic ds., C_1 and C_2 the concns., and M_1 and M_2 the mol. wts. of the substances 1 and 2. Substance 1 is used as standard. The conditions necessary for more accurate results are examd. and the necessity of detg. the same molar light-absorption coeff. is stressed. The accuracy of the method depends also on the concn. of the substances to be detd.: the nearer they come to the equimol. concn., the smaller is the relative error. S. Pajdakoff

DIMOV, G.; GENCHEV, Ml.

Determination of the minimum effective atomic radii. Minimum effective atomic radii of the elements of the first three main groups of the peroidic system. Zhur. struk. khim. 1 no.2:233-237 Jl-Ag '60. (MIRA 13:9)

1. Vysshiy meditsinskiy institut, kafedra khimii i fiziki, Sofiya.

(Atoms)

DIMOV, G., POPOV, K.

"The Significance and Problems of Conferences in Clinical Anatomy. p. 28"
(ZDRAVNO DELO) Vol. 6, No. 6, December 1952, Sofiya, Bulguria.

SO: Monthly List of East European Accessions L.C. Vol. 2, No. 11, Nov. 1953, Uncl.

DIMOV, G.

Visceral forms of anthrax. Suvrem.med., Sofia 6 no.2:27-35 1955.

1. Iz okruzhnata bolnitsa - Kolarovgrad (gl. lekar: St.Nikolov)
(ANTHRAX,
visceral)

DIMOV, G

MECHKARSKI, St; DIMOV, G.

Certain atypical cases of hemorrhagic fever. Suvrem.med., Sofia 6 no.4:38-41 '55.

1. Iz Okruzhnata bolnitsa-gr.Kolarovgrad (gl.lekar: St.Nikolov)
(EPIDEMIC HEMORRHAGIC FEVER,
atypical cases)

DIMOV, G.; GAZURKOV, I.

Cardiac echinococcosis. Khirurgiia, Sofia 8 no.1:81-82 1955.

(HEART DISEASE,
echinococcosis)
(ECHINOCOCCOSIS,
heart)

DIMOV, G., SAEV, St.

Problem of carcinoid of the appendix. Khirurgiia, Sofia 9 no.7-8: 676-681 1956.

1. Institut za burza meditsinska pomoshch "N.I. Pirogov"--Sofiia Glaven lekar: B. Devetakov institut za spetsializatsiia i usuvurshenstvuvane na lekarite--Sofiia katedra po bolnichna khirurgiia.

(ARGENTAFFINOMA, case reports,
appendix carcinoid (Bul))
(APPENDIX, neoplasms,
carcinoid, case reports (Bul))

DIMOV, G.; MINKOV, A.

Myxomas of the heart. Khirurgiia, Sofia 12 no.1:39-43 1959.

1. Institut za burza meditsinska pomoshch " N.I. Pirogov" Gl. lekar: B. Devetakov.

(HEART, neoplasms,
myxoma (Bul))
(MYXOMA, case reports,
heart (Bul))

DIMOV, G. (Sofiya)

Pathological anatomy of hemorrhagic fever in Bulgaria. Arkh.pat. 21 no.6:24-35 '59. (MIRA 12:12)

1. Iz patologoanatomicheskogo otdeleniya (nauchnyy rukovoditel' - dots. Iv. Goranov) pri Institute skoroy pomoshchi im. N.I. Pirogova (glav. vrach B. Devetakov).
(EPIDEMIC HEMORRHAGIC FEVER, pathol.
pathol. anat. (Rus))

POPIVANOV, Iv.; DIMOV, G.

Cholecystepancreatitis (biliopancreatitis). Khirurgiia, Sofia 13 no.2-3:168-171 '60.

1. Iz Instituta za bursa medicinska pomosht "N.I.Pirogov" -Sofiia.
(PANCREATITIS compl.)
(CHOLECYSTITIS compl.)

POPIVANOV, Iv.; DIMOV, G.

The acute pancreas, polyvisceral syndrome. Izv biol med BAN 3 no.4: 43-50 '60. (EEAI 10:3)

1. Institut za burza meditsinska pomosht "N.I.Pirogov," Sofia. (Glaven lekar: Khr. Zdravkov)
(PANCREAS)

KARALAMBEV, N.; DIMOV, G.

On surgical complications in salmonellosis. Khirurgiia, Sofia 13 no.7/8:654-659 '60.

1. Institut za burza meditsinska pomosht "N.I.Pirogov"
(SALMONELLA INFECTIONS compl.)

MARKOV, K.; DIMOV, G.

Spectrographic analysis of penicillin-resistance of staphylococci. Nauch. tr. vissh. med. inst. Sofia 39 no.1:233-237 '60.

1. Predstavena ot dots. Sv. Burdarov i ot dots. N. Karabashev zav. Katedrata po mikrob. i virusologiia zav. Kat. po meditsinska khimiia.

(PENICILLIN pharmacol) (STAPHYLOCOCCUS pharmacol)

DIMOV, G.; POPIVANOV, Iv.

On changes in internal organs in acute pancreatitis and their pathogenic interpretation. Khirurgiia, Sofia 14 no.2/3:361-362 '61.

1. Institut za burza meditsinska pomosht "N. I. Pirogov".

(PANCREATITIS compl)

DIMOV, G.

(13)

Sofia, Doklady Bolgarskoy Akademii Nauk, Vol 14, No 3, 1961 (cont'3)

17. "Specificity of the Fluorochromic Auramine in the Cytochemical Analysis of DNA" St. ACEV; pp 299-302.

18. "Antimicrobial Properties of Honey" C. CHRISTOV and St. MLADENOV; pp 303-306.

19. "On Natural and Antibiotic- or Sulfonamide-Induced Volutin Inclusions in Certain Microbes" G. CHRISTOV pp 307- 310.

20. "On the Detection of Nucleic Acids in the Embryo Sac of Helianthus annuus L. by Auramin" (In English) O.A. VASSILEVA-DRYANOVSKA; pp 311-314.

21. "Morphological Studies on the Growth of Preserved Tendon Homotransplants" G. DIMOV, I. ANDREEV and B. MECHKAREVI; pp 315-316. (In english)

22. "On the Inflammatory-Necrotizing Changes Induced in the River Frog (Rana ridibunda Pall.) by Rickettsialike Organisms" G. PASHALIEV, V.A. DOKOV, L.L. TCHACAROF, D. MOSCHKOV and V. TODOROV; pp 317- 320.

23. "Changes of the Hemopoiesis in Dogs After Stimulation in the Hypothalamic Area" N. NATSCHEFF; pp 321-324.

DIMOV, G., kand.med.nauk; ANDREYEV, Iv.

Pathomorphology of osteopoikilosis. Ortop.,travm.i protez. no.4:82-83 '62. (MIRA 15:5)

1. Iz Instituta skoroy pomoshchi im. N.I. Pirogova (dir. - Khr.Zdravkov), Sofiya.
(BONES—DISEASES)

POPIVANOV, Iv.; DIMOV, G.; KOVACHEVA, N.

On complications in acute pancreatitis. Khirurgiia 15 no.9/10: 938-944 '62.

1. Iz Instituta za bursa meditsinska pomosht "N.I. Pirogov.
(PANCREATITIS)

KOLIKOVSKI, N.; DIMOV, G.

Intraorganic distribution of arteries in the pancreas.
Izv Inst morf BAN 8 65-72 '63.

*

DIMOV, G.I.; BONDAREV, A.F.

[redacted] Strong focusing zones in the betatron. Izv. vys. ucheb. zav.; fiz. no.2:78-84 '58. (MIRA 11:6)

1.Tomskiy politekhnicheskiy institut im. S.M. Kirova.
(Particle accelerators)

21.2100

68867

S/139/59/000/05/004/026
E032/E114

AUTHORS: Dimov, G.I., and Petrov, Yu.K.

TITLE: Calculation of Admissible Magnetic Field Deviation in a Weak Focussing Accelerator with a Sectional Magnet

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Fizika, 1959, Nr 5, pp 19-25 (USSR)

ABSTRACT: Deviations from the ideal (calculated) magnetic field lead to the distortion of the orbit. The present work is concerned with the relation between the deviation from the ideal field and the orbit distortion. The case considered is that of an accelerator having four sectors and four "straight" regions. An approximate method is given which is based on the use of the fundamental harmonic of the unperturbed free oscillations described by Hill's equation. Using this method the orbit distortion is determined as a function of: 1) radial displacement of the sectors, 2) azimuthal displacement of the sectors, 3) rotation of the sectors in the horizontal plane, 4) vertical displacement of the sectors, 5) rotation of the sectors out of the horizontal plane, 6) rotation of the sectors in the mean meridianal plane,

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S/139/59/000/05/004/026
E032/E114

Calculation of Admissible Magnetic Field Deviation in a Weak Focussing Accelerator with a Sectional Magnet

Card 2/2

7) differences in the azimuthal dimensions of the sectors, and 8) deviation of the azimuthal dimensions of all the sectors from the nominal dimensions. Expressions are derived which can be used to estimate these effects.
There are 2 figures, 1 table and 3 references, of which 2 are Soviet and 1 is English.

ASSOCIATION: NII Tomskogo politekhnicheskogo instituta (Scientific Research Institute of the Tomsk Polytechnical Institute)

SUBMITTED: October 6, 1958

4

S/058/63/000/001/017/120
A062/A101

AUTHOR: Dimov, G. I., Fomenko, G. P.

TITLE: Betatron with a toroidal magnetic field

PERIODICAL: Referativnyy zhurnal, Fizika, no. 1, 1963, 41, abstract 1A384 (In collection: "Elektron. uskoriteli." Tomsk, Tomskiy un-t, 1961, 91 - 99)

TEXT: The motion of electrons in a betatron with an additional toroidal magnetic field directed along the orbit has been studied approximately. On the basis of this study a conclusion is drawn on the possibility of stable acceleration of particles in such a betatron; for an efficient injection a large rate of increase of the toroidal magnetic field is then required. It is maintained that, due to the increase of focusing, the intensity of accelerated particles in the betatron considered is higher by 3 - 4 orders than in the conventional betatron and is determined chiefly by the magnitude and rate of increase of the toroidal magnetic field.

A. Fateyev

[Abstracter's note: Complete translation]

Card 1/1

S/058/63/000/001/022/120
A062/A101

AUTHOR: Dimov, G. I.

TITLE: On the synchronization of a betatron-injector with a synchrotron

PERIODICAL: Referativnyy zhurnal, Fizika, no. 1, 1963, 41, abstract 1A393 (In collection: "Elektron. uskoriteli", Tomsk, Tomskiy un-t, 1961, 152 - 153)

TEXT: A new variant is proposed for synchronizing a betatron-injector with a synchrotron. Unlike in the previously described (RZh Fiz, 1958, no. 12, 26798), in this variant it is not required to stabilize the betatron excitation current. The excitation currents of the betatron and of the synchrotron are arranged to be in such a phase relationship that the moment of electron injection into the synchrotron should coincide with the maximum of the magnetic field of the betatron; the betatron extractor is then controlled by a signal from a permalloy transmitter placed in the field of the synchrotron.

V. Kanunnikov

[Abstracter's note: Complete translation]

Card 1/1

24c

L 44301-65 EWT(m)/EPA(w)-2/EWA(m)-2 Pab-10 IJP(c) GS

ACCESSION NR: AT5007921 S/0000/64/000/000/0274/0287

AUTHOR: Bayyer, V. N.; Blinov, G. A.; Bondarenko, L. N.; Yerozolimskiy, B. G.; Koroheynikov, L. S.; Mironov, Ye. G.; Naumov, A. A.; Onuchin, A. P.; Panasyuk, V. S.; Popov, S. G.; Sidorov, V. A.; Sil'vestrov, G. I.; Skrinskiy, A. N.; Khabakhpashev, A. G.; Aunlender, V. L.; Kiseley, A. V.; Kushnirenko, Ye. A.; Livshits, A. A.; Rodionov, S. N.; Synakh, V. S.; Yudin, L. I.; Abramyan, Ye. A.; Vasserman, S. B.; Vecheslavov, V. V.; Dimov, G. I.; Papadichev, V. A.; Protopopov, I. Ya.; Budker, G. I.

TITLE: Colliding electron-electron, positron-electron, and proton-proton beams

SOURCE: International Conference on High Energy Accelerators. Dubna, 1963. Trudy. Moscow, Atomizdat, 1964, 274-287

TOPIC TAGS: high energy interaction, high energy plasma, particle physics, particle beam, charged particle beam

ABSTRACT: In the Institute of Nuclear Physics, Siberian Department, Academy of Sciences SSSR, programs on high-energy particle physics are mainly concerned with work on colliding charged particle beams. The Institute considers it unsuitable

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L 7361-65
ACCESSION NR: AT5007921

for its purpose to install huge accelerators whose construction requires large resources outlaid and long time. For work on colliding electron-electron, positron-electron, and proton-proton beams, three installations are being built, which are in various stages of readiness. Work on colliding electron beams was conducted at the institute (then a laboratory of the Institute of Atomic Energy imeni I. V. Kurchatov) in the Fall of 1956, after Kerst's report on accelerators with colliding proton beams of the FFAG type. By that time Soviet scientists had already acquired some experience in obtaining large electron currents; in particular, the mentioned laboratory had installed and then abandoned a device for the spiral storage of electrons (G. I. Budker and A. A. Naumov, CERN Symposium, 1, 76 (1956)), by which, subsequently, circulating currents of the order of 100 amperes were obtained. In 1957 two variants of this device were considered at the same time. The first one consisted of two accelerators with spiral storage and subsequent transition of the particles to synchrotron state in comparatively narrow paths. The second one had storage rings with constant magnetic field and frequent external injection because of the damping of the oscillations under the action of radiation. The first variant was more cumbersome; the second variant contained an element not developed at that time, namely a 100-kilovolt commutator of 10 kilo-amperes with nanosecond front. At the end of 1957, the first positive results were obtained

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L 47304-65
ACCESSION NR: AT5007921

with a packing discharger of 100 kilovolts, and work stopped on the variant with storage rings. Originally it was proposed to set up two devices: VEP-1 of 2 × 130 Mev energy, and VEP-2 of 2 × 500 Mev energy. The VEP-1 was considered as an actual model of an accelerator and as a device for conducting initial experiments at low energies. After the Panofsky report in 1958 on his work with colliding electron beams conducted in his laboratory at Stanford, construction ceased on 500-Mev storage paths and work was continued on the 2 × 130-Mev installation. Instead of work on colliding electron beams with energies of 500 Mev, work at the end of 1958 was conducted with colliding positron-electron beams and the planning of the VEPP-2 device was begun, whose main elements are a strong-current electron accelerator and a high-vacuum storage path of 700 Mev energy. At the present time the VEP-1 and VEPP-2 are installed in Novosibirsk. The VEP-1 is in a state of neglect, but at the end of 1964 experiments will be begun with it. Installation of the VEPP-2 has been completed. To obtain a marked effect from the application of colliding proton beams, an accelerator is needed with an energy of at least 10 Gev. Since the ordinary accelerator at such energies is a very bulky machine, it was decided to combine the idea of colliding proton beams with the creation of an iron-less impulse accelerator with very large fields and a neutralized central busbar. This latter work of creating such a machine was reported by the authors at a Moscow conference

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ACCESSION NR: AT5007921 0

held in 1956. The presence of a field with two directions in an iron-less accelerator with central busbar permits the acceleration of protons toward opposite sides in one machine, which makes possible the collision of protons in case of a suitable race-track. At the present time the Institute is developing a proton device with a magnetic field of about 200 kilogauss and radius of 2 meters for a particle energy of 12 Gev in the beam (equivalent energy is around 300Gev). Tests are being conducted on models, and an effective method of injection by overcharging of negative ions is under study. Also under development are an impulse electric power supply system of 100 million joules capacity and an hf power supply. Since 1958 the Institute has been conducting theoretical investigations on the limits of applicability of quantum electrodynamics [V. N. Bayyer, ZhETF, 37, 1490 (1959), and UFN, 78, 619 (1962)] for the calculation of the radiational corrections to the electrodynamic cross-sections [V. N. Bayyer and S. A. Kheyfets, ZhETF 40, 613-715 (1961) and Nuclear Physics (in print)], and on other problems of high-energy particle physics that are connected with the preparation of experiments on colliding beams [V. N. Bayyer, I. B. Khriplovich, V. V. Sokolov, and V. S. Synakh, in ZhTF, 1961]. The present report takes up under the mentioned three main headings the following pertinent topics: the accelerator-injection, storage paths, electron-optical channel,

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L 47304-65

ACCESSION NR: AT5007921

input and output system, experiments on storage, proposed work, experimental set-up, physical layout of magnets, power supply, etc. Orig. art. has: 8 figures.

ASSOCIATION: Institut yadernoy fiziki SO AN SSSR (Institute of Nuclear Physics, SO AN SSSR)

SUBMITTED: 26May64 ENCL: 00 SUB CODE: EE, NP

NO REF SOV: 012 OTHER: 003

Card 5/5

L 4233-66 EWT(m)/EPA(w)-2/EWA(m)-2 IJP(c) GS
ACCESSION NR: AT5007971 S/0000/64/000/000/0993/0996

28
27
B+1

AUTHOR: Bucker, G. I.; Dimov, G. I.

TITLE: Overcharge injection of protons into ring accelerators 19

SOURCE: International Conference on High Energy Accelerators. Dubna, 1963. Trudy. Moscow, Atomizdat, 1964, 993-996

TOPIC TAGS: high energy accelerator, proton accelerator, proton beam, particle collision

ABSTRACT: The problem of intensity, which is important in any accelerator, becomes a problem of principle in the colliding-beam accelerator. The Nuclear Physics Institute of the Siberian Department, Academy of Sciences SSSR, is developing an iron-less accelerator with colliding proton beams, in which the particles accelerated in opposite directions in slight excentric orbits collide during the acceleration process. Because such an installation does not store the accelerated particles, its practical expediency is very sensitive to the magnitude of the initial current. Therefore, the Institute has conducted work on the multi-rotation injection of negative ions or atoms of hydrogen into the accelerator, which collapse against the target in the orbit with the protons being entrapped into the

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accelerator track at the expense of the overcharge. Experiments have been conducted in which the particles are injected into a ring accelerator from a 1.5 Mev Van-de-Graaf accelerator; radius of storage orbit R = 42 cm, and half cross-section of the ring chamber ΔR = 0.1 R. The overcharge target M on the orbit must be sufficiently "transparent" for the circulating protons and must be conducted and sufficiently rapidly from the chamber after termination of injection. The overcharge target M is realized in the form of a gaseous jet from a Laval nozzle. The hydrogen jet is the most "transparent" for protons, but it is easier to create a jet with small divergence from a monoatomic gas. The gaseous jet transects the vacuum chamber and exists through a diaphragm into the suction vacuum reservoir. A gaseous jet in vacuo has been obtained with a divergence of about 0.1 radian and length 10 cm. In the case of a diaphragm and suction reservoir 3 cm in diameter, there remains in the active operating volume less than 1% of the gas flowing out from the Laval nozzle. A nitrogen pump is used for suction of the hydrogen jet. The gaseous jet is in operation only during the period of injection. Operation of the jet is carried out with the aid of an electrodynamic shut-off device. The minimum duration of the jets obtained at the Institute is about 30 microseconds. The present report discusses the method of overcharge injection into ring accelerators, which was proposed by one of the authors of this report in 1959. The possi-

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ACCESSION NR: AT5007971

bility of such an injection method was indicated also later (Heinz V. Patent FRG No. 1090349 (1961)). Orig. art. has: 4 figures.

ASSOCIATION: Institut yadernoy fiziki SO AN SSSR (Nuclear Physics Institute, SO AN SSSR)

SUBMITTED: 26May64 ENCL: 00 SUB CODE: NP.

NO REF SOV: 000 OTHER: 004

Card 3/3

L 25774-66 EWT(m) IJP(c)

ACC NR: AP6016378 SOURCE CODE: UR/0089/65/019/006/0507/0510

AUTHOR: Budker, G. I.; Dimov, G. I.; Popov, A. G.; Sviridov, Yu. K.; Sukhina, B. N.; Timoshin, I. Ya.

34
B

ORG: none

TITLE: Experiments with charge exchange injection of protons in a storage ring

SOURCE: Atomnaya energiya, v. 19, no. 6, 1965, 507-510.

TOPIC TAGS: Van de Graaff accelerator, proton, hydrogen ion

ABSTRACT: Negative hydrogen ions were extracted from a high frequency source and were accelerated in a Van de Graaff machine to 12 μamp. This beam then struck a neutralizing gas target of hydrogen or carbon dioxide having an optimum thickness of 2.5×10^{16} or 3×10^{15} molecules/cm^2 respectively. The resulting beam of neutral hydrogen atoms then struck a jet of hydrogen having a thickness of $\sim 10^{17}$ atoms/cm^2. The hydrogen jet was directed along a radius from the center of a storage ring with an aperture of 8 X 4 cm and an orbital radius of 42 cm. The particle losses did not exceed a few percent with injections up to 1500 revolutions. The orbital current increased linearly for the first 100 revolutions and remained constant for ~150 revolutions. During this period the orbital radius of the beam decreased and then struck the internal hydrogen stream. Thus the injection efficiency was close to 100%. These preliminary results indicate that it is possible to accumulate a proton current that is limited only by the space charge. Orig. art. has: 5 figures. [VA]

SUB CODE: 20 / SUBM DATE: none

Card 1/1 UDC

L 29307-66 EWT(m) IJP(c) GD
ACC NR: AT6012261 SOURCE CODE: UR/0000/65/000/000/0001/0013

AUTHORS: Budker, G. I.; Dimov, G. I.; Popov, A. G.; Sviridov, Yu.K.; Sukhina, B. N.; Timoshin, I. Ya.

ORG: Institute of Nuclear Physics, Siberian Department AN SSSR (Institut yadernoy fiziki Sibirskogo otdeleniya AN SSSR)

53
B+1

TITLE: Experimental investigation of charge-exchange injection of protons in annular accelerators and storage rings

19

SOURCE: AN SSSR. Sibirskoye otdeleniye. Institut yadernoy fiziki. Doklady, 1965. Eksperimental'noye issledovaniye perezaryadnoy inzhektsii protonov v kol'tsevyyee uskoriteli i nakopiteli, 1-13

TOPIC TAGS: charge exchange, proton accelerator, energy scattering, circular accelerator

ABSTRACT: The authors describe experiments on the accumulation of protons in an annular track by means of a charge exchange (Fig. 1). A beam of atoms or negative ions of hydrogen is introduced on a proton orbit in a magnetic field at the point where it crosses a hydrogen jet. The particles lose electrons in the jet and are accumulated on the orbit in the form of protons. The protons passing many times through the jets lose energy and are scattered. In a constant magnetic field the time of

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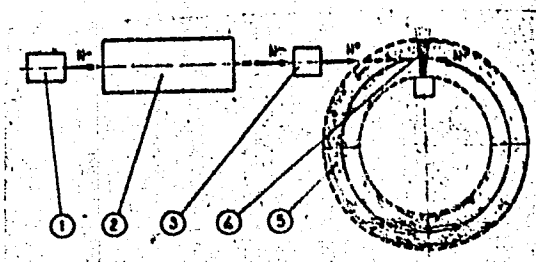

Fig. 1. Diagram of experimental setup. 1 - Source of negative hydrogen ions, 2 - accelerator, 3 - input gas target, 4 - jet of hydrogen on orbit, 5 - storage ring

L 29307-66

ACC NR: AT6012261

accumulation is limited by the loss of the circulating protons to the inner wall of the storage ring. If the average energy loss is compensated for, the storage time is limited by elastic scattering and by the energy scatter of the protons. The experimental setup was described elsewhere (Mezhdunarodnaya konferentsiya po uskoritelyam Dubna, 1963, [International Conference on Accelerators], Moscow, 993 -- 996, 1964). Methods of measuring the proton current and the proton lifetime in the storage ring are briefly described. Various parts of the experimental setup are described in detail. The ion source was a modified electrostatic generator. Up to 10^{12} protons could be accumulated in the betatron loop (current ~ 1 ampere). The injection efficiency was close to 100%. Hydrogen and carbon dioxide were used for the input targets, with optimal thickness 2.5×10^{16} and 3×10^{15} mol/cm^2. An accelerating voltage of 200 v was applied in pulses of 500 μsec duration, so that accumulation for 2500 revolutions was possible. The loop current increased approximately linearly to 300 ka. The various sources of losses are briefly analyzed. Orig. art. has: 8 figures and 7 formulas.

SUB CODE: 20/ ORIG REF: 001/ OTH REF: 001

Card 3/3 BK

L 02276-67 EWT(m)/T

ACC NR: AP6025251 SOURCE CODE: UR/0057/66/036/007/1239/1240

AUTHOR: Dimov, G. I.; Dudnikov, V. G.

55
B

ORG: Institute of Nuclear Physics, Novosibirsk (Institut yadernoy fiziki)

TITLE: Charge-changing collision cross sections of approximately 1 Mev negative hydrogen ions in several gases

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 36, no. 7, 1239-1240

TOPIC TAGS: hydrogen, charge exchange, hydrogen ion, positive ion, negative ion, atom, gas target

ABSTRACT: The authors have measured the cross sections of H_2, He, N_2, CO_2, C_3H_8, CCl_2F_2, and SF_4 for the $H^- \rightarrow H^0$ and $H^- \rightarrow H$ reactions of 0.9, 1.1, and 1.3 MeV H^- ions. The measurements were undertaken in connection with charge exchange injection of protons into storage rings. The H^- beam from a Van de Graaf accelerator was magnetically analyzed, focused with a quadrupole lens, passed through a charge exchange chamber of 21 cm equivalent length, and separated into H^-, H^0, and H^+ beams with a magnetic field. The H^- and H^+ beam intensities were measured with Faraday cups, and the H^0 beam intensity was measured with a calorimeter. The charge exchange chamber was separated from the rest of the apparatus by 0.5 cm diameter 5 cm long ion ducts, and gas pressures up to 10^{-4} mm Hg in the charge exchange chamber did not appreciably affect the vacuum in the remainder of the system. Measurements were made at target thicknesses from

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ACC NR: AP6025251

2×10^{12} to 3.5×10^{14} molecule/cm^2, and the $H^0 \rightarrow H^+$ cross sections were derived from the target thickness giving maximum H^0 yield. The cross sections, maximum H yields, and optimal target thicknesses are tabulated. Accuracies of 18, 23, and 30% are claimed for the $H^- \rightarrow H^0$, $H^- \rightarrow H^+$, and $H^0 \rightarrow H^+$ cross sections, respectively. The $H^- \rightarrow H^+$ cross sections were from 3 to 6% of the corresponding $H^- \rightarrow H^0$ cross sections, and both were inversely proportional to the energy. The cross sections of the complex molecules were less than the sums of the cross sections of their constituent atoms. The maximum H^0 yield was approximately 50% for all the target gases. Orig. art. has: 1 figure and 1 table.

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Hydrobiology

BULGARIA

DIMOV, I., Institute of Fishing Economy and Oceanographic Research, Varna, Bulgaria

"Vertical Distribution of Zooplankton in a Comparatively Homogeneous Water Layer of the Black Sea"

Sofia, Doklady Bolgarskoy Akademii Nauk, Vol 19, No 12, 1966, pp 1179-1181

Abstract: [French article] In view of the irregular plankton distribution in seas, the author carried out in July of 1959 an experimental determination of the vertical distribution of the zooplankton in a comparatively homogeneous water layer of the Black Sea, 20 miles from cape Galata. Results covering Acartia clausi-copepodit, Podon polyphemoides, Cirripedia larves, Noctiluca miliaris, Pisces-ova, and Pisces larvae are presented in the form of depth-concentration curves. An analysis of the results shows that considerable variations of plankton concentration are found even in water layers of reasonably constant temperature, salinity, and oxygen content. References: 1 Bulgarian, 5 Soviet, and 2 Western. (Manuscript received, 15 Aug 66.)

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Vol. 10, no. 6, June 1955
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1. "An Improved Type of Tent for Drying Alfalfa," Ivanka DOBREVA, Junior Scientific Collaborator at the regional livestock scientific research institute in Stara Zagora; pp 2-4.

2. "Our Experience with Preserving Green Alfalfa with Sodium Metabisulfide," Ivan DIMOV, Chairman of the "Road to Communism" Cooperative Farm in Isperikh; pp 5-8.

3. "For the Correct Distribution and Consolidation of Fodder Production in the Cooperative Farms," Zhivko STRASHILOV, Junior Scientific Collaborator, TsNIISS (Central Agricultural Scientific Research Institute); pp 9-14.

4. "The Influence of the Age of Hogs for Breeding Purposes on Some of Their Productive Characteristics," Ivan VENEV (Senior Assistant, "G. Dimitrov" Agricultural Statistical Institute) and Vladimir DIMITROV (Senior Zoologist, "G. Dimitrov" State Farm); pp 15-17.

5. "Combined Mechanization of the Poultry Pen in the Village of Malomirovo, Yambol Okrug," Stefan MILANOV, Chief Zoologist at the "V.I. Lenin" Cooperative Farm; pp 18-22.

6. "Many Paths Lead to Cheap Production," Stelka ILIEVA, Poultry Keeper at the cooperative farm in the village of Dropla (Tolbukhin okrug), holder of the order of the Red Banner of Labor, and people's representative, as told to G. GEORGIEV; pp 23-25.

7. "The Daily Productivity of Danubian and Draft Horses in the Cultivation of Agricultural Crops," Ivan YOROV, Junior Scientific Collaborator, Livestock Scientific Research Institute, Kostinbrod kray; pp 25-29.

8. "Feeding as a Factor in Breeding," Professor Petko IVANOV; pp 30-34.

9. "Our Experience with Breed Improvement," Petur GERDZHIKOVSKI, Director of the breed improvement station in Byala Slatina; pp 35-39.

10. "The Artificial Insemination of Cows with Sperm

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"Experiment for Producing Agglutinative Serums for Dysentery from Sheep and Dogs." p. 29,
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(LUNGS, abscess
management (Bul))